Met Office

NEWS

Weather forecasts could reduce aviation CO2 emissions

Author: Press Office
08:00 (UTC+1) on Tue 25 May 2021

Global weather forecasting data from the Met Office is helping the aviation industry make significant CO2 cuts and save money on fuel.

Using Met Office high resolution data, Swedish software company AVTECH is helping airlines fly more efficiently. At pre-COVID 19 air traffic levels the 'ClearPath' technology has the potential to save 1.24m tonnes of CO_2 each year(1).

By calculating and sending the most optimal flight profile to the cockpit, 'ClearPath' enables pilots to make adjustments to their flight path to save fuel and fly as efficiently as possible.

Standard weather data provided to airlines gives crucial wind information every 9 minutes during the cruise phase of a flight. The Met Office high resolution global data can provide wind data in less than one-minute intervals, greatly improving the efficiency of flights.

Head of Transport at the Met Office, Jonathan Dutton, said: "As the world moves towards net zero it is crucial that we use all the technology at our disposal to help reduce CO_2 emissions. By using high resolution global weather forecast data from the Met Office, hundreds of thousands of tonnes of CO_2 could be saved each year if airlines adopt innovative technology such as the solution developed by AVTECH. This is just one example of how meteorological data can be used to make significant improvements to the emissions of transport industries."

Niklaes Persson, Marketing Director at AVTECH, said: "Through our collaboration with the Met Office and the integration of high-resolution weather in our services, we have managed to further reduce our customer's fuel usage and minimize the environmental footprint of each individual flight. We are looking forward to continue our collaboration leading to solutions that makes the aviation industry more efficient and sustainable."

Norwegian has been an early adopter of the technology. Using it's Boeing 737 aircraft, it was found that the airline could reduce CO_2 emissions by an additional 10-15,000 tonnes per year based on pre-COVID 19 air traffic levels(2). This equates to the same amount of emissions produced by 31 million miles driven in an average passenger vehicle, or in other words by driving to the moon and back 64 times(1).

If all airlines adopted this technology and were operating at 40% of pre-COVID 19 air traffic levels, 496,000 tonnes of CO_2 could be saved each year. If the industry returns to pre-COVID 19 levels, 1.24m tonnes could be saved each year if all airlines adopted this technology. This is the amount of carbon absorbed by 1,619,382 acres of US forests in one year(1).

"Norwegian is proud to be an industry leader in the use of fuel saving technologies that lead to reduced CO_2 emissions and greater flight planning efficiency. Our pilots are at the forefront of our sustainability goals, their extensive experience coupled with ongoing training in fuel saving best practices has allowed Norwegian to take immediate and tangible action to lower our CO_2 emissions across every flight." Said Anders Fagernæs, Norwegian VP Sustainability.

ClearPath is just one example of how vast volumes of data produced by the Met Office can improve the climate impacts of industry. On Tuesday 25 May the Met Office and AVTECH will host a webinar for the aviation industry to discuss how wind forecasting data is reducing CO_2 emissions in the aviation industry.

Notes:

1. Figures extrapolated using Available Seat Kilometres for 2018 and using EPA CO_2 calculator https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator
2. https://media.uk.norwegian.com/pressreleases/norwegian-continues-to-reduce-emissions-with-upgraded-technology-up-to-200000-tons-per-year-2970557

© Crown Copyright